

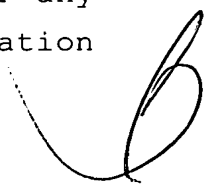
and resistance to accidental openings as taught by McHenry et al. This rejection is respectfully traversed.

Metal/ceramic substrates used in electrical circuits are produced in a multiple process. The process includes the application of a metal layer, usually copper, onto a ceramic layer. After bonding the metal layer to the ceramic layer by a heat process, the substrates are cooled to room temperature. Stress forces develop in the substrate due to the different thermal expansion coefficient of the two materials. The stresses cause uncontrolled breaks in up to 5% of the substrates. Substrates experiencing these breaks are not useable.

The invention utilizes edge reduction along the edge adjacent to the break lines in the substrate to eliminate the uncontrolled breaks. The edge reduction is not provided for forming a break line or to assist in the breaking of the ceramic layer into smaller substrates, but is performed along the edge of each metal surface that is distant from the breaking line. The breaking line for forming smaller substrates is provided only in the ceramic layer. Edge reduction makes the edge area of each metal surface somewhat softer so that internal stresses do not result in uncontrolled breaks of the ceramic layer.

As mentioned in the statement of rejection in the Office Action, Schulz-Harder does not disclose edge reduction. McHenry et al discloses a beverage can having a weakened line for the easy opening of a can. The disclosure of the opening of a beverage can is not applicable to the problems associated with metal/ceramic substrates as the issue of easy opening and preventing accidental opening are not present with these substrates. The edge reduction of the invention is not provided for separating large substrates into smaller substrates but reduces stresses in the ceramic layer and the uncontrolled breaks which would result from these stresses.


The claims are allowable over the prior art and favorable action is eagerly and earnestly solicited. If any issues remain, and the Examiner believes a telephone conversation



would resolve such issues, the Examiner is urged to contact the undersigned attorney.

If any fees are due and owing, the Commissioner is authorized to charge Deposit Account 08-2455.

Respectfully submitted,


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Reg. 41,533

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